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AMSAT NEWS SERVICE
ANS-165

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-165 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 165
>From AMSAT HQ KENSINGTON, MD.
DATE June 14, 2015
To All RADIO AMATEURS
BID: $ANS-165

Dave Jordan's (AA4KN) article about Fox-1 Featured in July QST

Dave Jordan AA4KN, writing on behalf of the Fox Team, has published an article, "Fox-1: The New Era of Amateur Satellites" which will appear in the July 2015 issue of QST. The article introduces the CubeSate program, describes the Fox-1 class of CubeSats, outlines the the student experiments and briefd on using Fox-1. The article is eligible for the cover plaque award. Look for it on pages 43-45 of the Jult QST.

[ANS Thanks the ARRL and QST for the above information]

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Amateur Radio Newsline's Bill Pasternak, WA6ITF Silent Key

The AMSAT News Service has received the sad news of the passing of Amateur Radio Newsline's Bill Pasternak, WA6ITF. James Pastorfield, KB7TBT, reported on Friday, June 12 on behalf of Amateur Radio Newsline that Bill's key had gone silent.

Bill had been recently hospitalized; Skeeter Nash, N5ASH, reported that, "Bill was in serious condition after being diagnosed with--as he termed it--”a broken back.” I take this to mean he has fractured at least one vertebrae. He is being treated for the pain associated with such an injury, and thus is not able to write (type), nor can he read for very long."

Nash continued, "Don Wilbanks, AE5DW and I discussed the long-term future of the Amateur Radio Newsline, and what is needed to get it back into production. The Newsline team is more committed than ever to get production re-started as soon as possible.

Wilbanks wrote, "A dear friend has left us after a long struggle with his health. Bill Pasternak, WA6ITF, as our mutual friend Beau Weaver, W6KHJ so eloquently says, has taken his light into another room. Bill touched lives all over the world through amateur radio. He was like a big brother, an uncle to me. He was my mentor. He was my friend. Rest my friend. I'll see you again one day."

Bill was a friend to all a strong advocate to the AMSAT News Service (ANS). He will be missed.

[ANS thanks Amateur Radio Newsline for the above information]

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Free Education Webinars From NASA Educator Professional Development

NASA Educator Professional Development is presenting a series of free webinars open to all educators. Join NASA education specialists to learn about activities, lesson plans, educator guides and resources that bring NASA into your classroom. Registration is required to participate. Simply click on the provided link to register.

Eyes on the Solar System: Pluto
Audience: Pre-service, In-service, Home School and Informal Educators of Grades 6-12
Event Date: June 16, 2015, at 5 p.m. EDT
"Eyes on the Solar System" is a 3-D environment full of real NASA mission data. Explore the cosmos from your computer. Fly with NASA's New Horizon spacecraft as it approaches Pluto and takes very first close up pictures of the dwarf planet and its moons. Learn how to use this free software and see the entire solar system moving in real time.
Register online to participate. https://www.etouches.com/131330

ISS Across the Curriculum Series: Solar Energy for Space Exploration
Audience: Pre-service, In-service, Home School and Informal Educators of Grades 5-8
Event Date: June 17, 2015, at 3 p.m. EDT
Solar Energy for Space Exploration is a series of activities designed to introduce your students to the basics of electrical circuits while using the development of space habitats as a thematic

backdrop. Updated online resources and adaptation of classroom activities will be discussed.
Register online to participate. https://www.etouches.com/130151

NASA Engineering Design Process 101: An Introduction to Classroom Application
Audience: Pre-service, In-service, Home School and Informal Educators of Grades 4-8
Event Date: June 18, 2015, at 6 p.m. EDT
Learn more about the engineering design process and its application to real-world problem solving. Explore NASA design challenges and other NASA STEM classroom resources. Engineering design is a common topic across each grade level in the Next Generation Science Standards and an important concept in understanding the world around us.
Register online to participate. https://www.etouches.com/130414

For a full schedule of upcoming NASA Educator Professional Development webinars, visit http://www.txstate-epdc.net/events/.

Questions about this series of webinars should be directed to Steve Culivan at Stephen.p.culivan(a)nasa.gov.

[ANS thanks NASA Education Express Message -- June 11, 2015 for the above information]

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AMSAT-NA BoD Nominations Notice - Last Chance for June 15 Deadline

2015 AMSAT-NA Board of Directors Nomination petitions MUST ARRIVE no later than JUNE 15th at the AMSAT-NA office.
If the nomination is a traditional written nomination, no other action is required.

If it is other than this, i.e. electronic, a verifying traditional written petition MUST BE RECEIVED at the AMSAT-NA office at the above address within 7 days following the close of nominations on June 15th.

ELECTRONIC SUBMISSIONS WITHOUT THIS SECOND, WRITTEN VERIFICATION ARE NOT VALID UNDER THE EXISTING AMSAT-NA BYLAWS.

Only one day left to submit nominations for the upcoming AMSAT-NA Board of Directors election. Four director’s terms expire this year: Barry Baines, WD4ASW, Alan Biddle, WA4SCA, Mark Hammond, N8MH, and Jerry Buxton, N0JY. In addition, up to two Alternates may be elected for one year terms.

A valid nomination requires either one Member Society or five current individual members in good standing to nominate an AMSAT-NA member for Director. Written nominations, consisting of the nominee’s name and call, and the nominating individual’s names, calls and individual signatures should be mailed to: AMSAT-NA, 10605 Concord St, #304 Kensington, MD 20895-2526.

In addition to traditional submissions of written nominations, which is the preferred method, the intent to nominate someone may be made by electronic means. These include e-mail, Fax, or electronic image of a petition. Electronic petitions should be sent to MARTHA(a)AMSAT.ORG or Faxed to (301) 822-4371.

[ANS thanks Alan Biddle, WA4SCA, AMSAT-NA Corporate Secretary for the above information]

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AMSAT 2015 Field Day Announcement – June 27-28

It's that time of year again: Field Day! Each year the American Radio Relay League (ARRL) sponsors Field Day as a "picnic, a campout, practice for emergencies, an informal contest and, most of all, FUN!"

The event takes place during a 24-hour period on the fourth weekend of June. For 2015, the event takes place during a 27-hour period from 1800 UTC on Saturday June 27, through 2100 UTC on Sunday June 28, Those who set up prior to 1800 UTC on June 27 can operate only 24 hours.

The Radio Amateur Satellite Corporation (AMSAT) promotes its own version of Field Day for operation via the amateur satellites, held concurrently with the ARRL event.

If you are considering ONLY the FM voice satellite SO-50 for your AMSAT Field Day focus – don't – unless you are simply hoping to make one contact for the ARRL rules bonus points. The congestion on FM LEO satellites was so intense in prior years that we must continue to limit their use to one-QSO-per-FM-satellite. This includes the International Space Station. You will be allowed one QSO if the ISS is operating voice.

You will also be allowed one digital QSO with the ISS or any other digital, non-store-and-forward, packet satellite (if operational). Many good contacts can be made on the linear transponder satellites including AO-73, FO-29, and AO-7. During Field Day the transponders come alive like 20 meters on a weekend. The transponders on these satellites will support multiple simultaneous SSB or CW contacts.

The 2015 AMSAT Field Day event is open to all Amateur Radio operators. Amateurs are to use the exchange as specified in ARRL rules for Field Day. The AMSAT competition is to encourage the use of all amateur satellites, both analog and digital.

AMSAT Field Day information is also posted on the web at: http://www.amsat.org/?page_id=216

[ANS thanks Bruce Paige, KK5DO, AMSAT Director of Contests and Awards, for the above information]

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Montserrat (FK86)  active on satellites June 10 – June 18, 2015 - Update

Jim White WD0E reports on the status of the Montserrat (FK86) activation, "We finally got the crate of antennas out of customs today and have the sat station set up...  We will transmit on 145.925 and tune the passband for callers."

Montserrat (FK86) – Jim White, WD0E, will be active on satellites from Gingerbread Hill, St. Peters, Montserrat (FK86) as part of the

VP2MKV team June 10 – June 18, 2015. WD0E will attempt to post a list of satellite QSOs daily on the AMSAT-BB. There will also be HF activity and an entry in the ARRL June VHF Contest. QSL via N0KV and LoTW. From WD0E: “VP2MKV will operate FO-29 only on selected passes. We will attempt the long hops to the edges of coverage if the equipment performs well at low elevations and obstructions allow. We will attempt to post passes we plan to work 24 hours in advance on amsat-bb. The uplink frequency will be 145.925 and we will tune our downlink for stations calling. The location is 16.776924N 62.214474W in grid FK86vs. Equipment is an ICOM 910H and Arrow antenna. Uplink power will be about 20W. Stations are asked to work us only once on the satellite. If we respond with your call you are in the log.” Tentative pass plan, from WD0E: “We will attempt to be on the first two FO-29 ascending node passes June 11 through 20. If time allows we may be on the third ascending node those days. Those passes happen in late morning to mid afternoon Montserrat time. On those passes we will look first for South America when the satellite is South of us, then North America, then Europe during the short mutual window. If there are 2 meter or 6 meter terrestrial openings during the VHF contest June 13 and 14 we will not be on satellite at those times.”

[ANS thanks Jim WD0E for the above information]

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ARISS Announces Challenge Coin for Donation

Receive an ARISS Challenge Coin for a donation of $100 or more

* ARISS is Amateur Radio on the International Space Station.

* Licensed hams contact the ISS via Amateur Radio voice, packet/APRS, SSTV, and digital TV.

* Students interview astronauts in space and learn about life in space, space research, and radio science.

* Hams on the ground experiment with space communications

* Amateur Radio supports NASA by providing ISS backup communications

* Your donations will help support continuing operations and Amateur Radio equipment upgrades on the ISS.

Go to www.amsat.org/ and click on “Donate ARISS” to help keep Amateur Radio on the ISS in orbit!

[ANS thanks ARISS for the above information]

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Twin Cubesat Mars Flyby Will Support NASA InSight Landing

When NASA launches its next mission on the journey to Mars - a stationary lander in 2016 - the flight will include two CubeSats. This will be the first time CubeSats have flown in deep space. If this flyby demonstration is successful, the technology will provide NASA the ability to quickly transmit status information about the

main spacecraft after it lands on Mars.

The twin communications-relay CubeSats, being built by NASA's Jet Propulsion Laboratory (JPL), Pasadena, California, constitute a technology demonstration called Mars Cube One (MarCO). CubeSats are a class of spacecraft based on a standardized small size and modular use of off-the-shelf technologies. Many have been made by university students, and dozens have been launched into Earth orbit using extra payload mass available on launches of larger spacecraft.

The basic CubeSat unit is a box roughly 4 inches (10 centimeters) square. Larger CubeSats are multiples of that unit. MarCO's design is a six-unit CubeSat - about the size of a briefcase -- with a stowed size of about 14.4 inches (36.6 centimeters) by 9.5 inches (24.3 centimeters) by 4.6 inches (11.8 centimeters).

MarCO will launch in March 2016 from Vandenberg Air Force Base, California on the same United Launch Alliance Atlas V rocket as NASA's Interior Exploration using Seismic Investigations, Geodesy and Heat Transport (InSight) lander. Insight is NASA's first mission to understand the interior structure of the Red Planet. MarCO will fly by Mars while InSight is landing, in September 2016.

"MarCO is an experimental capability that has been added to the InSight mission, but is not needed for mission success," said Jim Green, director of NASA's planetary science division at the agency's headquarters in Washington. "MarCO will fly independently to Mars."

During InSight's entry, descent and landing (EDL) operations on Sept. 28, 2016, the lander will transmit information in the UHF radio band to NASA's Mars Reconnaissance Orbiter (MRO) flying overhead. MRO will forward EDL information to Earth using a radio frequency in the X band, but cannot simultaneously receive information over one band while transmitting on another. Confirmation of a successful landing could be received by the orbiter more than an hour before it's relayed to Earth.

MarCO's radio is about softball-size and provides both UHF (receive only) and X-band (receive and transmit) functions capable of immediately relaying information received over UHF.

The two CubeSats will separate from the Atlas V booster after launch and travel along their own trajectories to the Red Planet. After release from the launch vehicle, MarCO's first challenges are to deploy two radio antennas and two solar panels. The high-gain, X-band antenna is a flat panel engineered to direct radio waves the way a parabolic dish antenna does. MarCO will be navigated to Mars independently of the InSight spacecraft, with its own course adjustments on the way.

Ultimately, if the MarCO demonstration mission succeeds, it could allow for a "bring-your-own" communications relay option for use by future Mars missions in the critical few minutes between Martian atmospheric entry and touchdown.

By verifying CubeSats are a viable technology for interplanetary missions, and feasible on a short development timeline, this technology demonstration could lead to many other applications to explore and study our solar system.

JPL manages MarCO, InSight and MRO for NASA's Science Mission Directorate in Washington. Technology suppliers for MarCO include: Blue Canyon Technologies of Boulder, Colorado, for the attitude-control system; VACCO Industries of South El Monte, California, for

the propulsion system; AstroDev of Ann Arbor, Michigan, for electronics; MMA Design LLC, also of Boulder, for solar arrays; and Tyvak Nano-Satellite Systems Inc., a Terran Orbital Company in San Luis Obispo, California, for the CubeSat dispenser system.

For information about MarCO, visit:
http://www.jpl.nasa.gov/cubesat/missions/marco.php

For information about InSight, visit:
http://www.nasa.gov/insight

Learn more about NASA's journey to Mars at:
http://www.nasa.gov/content/journey-to-mars-overview

[ANS thanks NASA Press Release 15-122, June 12, 2015 for the above information]

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ARISS News

Upcoming ARISS Contact Schedule as of 2015-06-13  05:00 UTC

>From  2015-06-11 to 2015-07-24, there will be no US Operational Segment (USOS) hams  on board ISS.  So any school contacts during this period will be conducted  by the ARISS Russia  team.

Watch
http://www.ariss.org/upcoming-contacts.html
for information about upcoming contacts as they are scheduled.

Exp. 42/43 has returned to earth. Congratulations for the job well done!
Terry Virts
Anton  Shkaplerov
Samantha Cristoforetti  IZØUDF

[ANS thanks ARISS, and Charlie, AJ9N for the above information]

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Satellite Shorts From All Over

Panoramic Tour of ISS

ESA astronaut Samantha Cristoforetti has been cataloguing her home of six months to create panoramic images you can rotate and explore. Each section of the Space Station required around 14 fisheye photos stitched together.

Areas of interest can be clicked on for more information in another browser window.

Eventually, the entire Station will be available to explore right here on this page – follow us to receive updates.
http://tinyurl.com/ANS165-ISSTour

Can you find the HAMTV transmitter on the floor?

[ANS Thanks European Space Agency for the above information]

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AMSAT User Services and the Editors of the AMSAT New Service pass on our condolences to ANS Weekly Co-Editor Joe Spier K6WAO and his family on the death of Joe's mother this week.

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, KC8YLD
kc8yld at amsat dot org